

Date: 06/12/2009 07:49 PM
From: Victor Ketellapper/EPR/R8/USEPA/US
To: Bonita Lavelle
Subject: Re: Letter of support for asbestos proposal?

No problem. I am out of the office for the next week and a half. Do they need it before then?

Bonita Lavelle

----- Original Message -----

From: Bonita Lavelle
Sent: 06/12/2009 04:05 PM MDT
To: Victor Ketellapper
Cc: Mike Cirian; Rebecca Thomas
Subject: Fw: Letter of support for asbestos proposal?

Hi Victor

thought you should be aware of Dr. Ward's research proposal - below.

We've worked really well with Tony in the past. His research led us to investigating tree bark. He continues to be out in front of us in investigating exposures associated with cutting down trees and burning them.

In the past his work seemed to be mostly related to OU3 but his new proposal is more focused on OU4 human health exposure questions.

I wrote a letter of support for him in 2008 - Paul signed it. I'd like to send a similar one in support of this new proposal.

Bonnie

----- Forwarded by Bonita Lavelle/EPR/R8/USEPA/US on 06/12/2009 03:59 PM -----

"Ward, Tony J."
<Tony.Ward@mso.umt.edu>
06/09/2009 12:58 PM

To: Bonita Lavelle/EPR/R8/USEPA/US@EPA
cc
Subject: Letter of support for asbestos proposal?

Hi Bonnie,

Hope you are doing well. We are in the process of wrapping up a revised research proposal to be submitted to the National Institute of Environmental Health Sciences (NIEHS). The project has changed dramatically since the original NIOSH submittal a while back. (Thanks again to you and Paul for providing a letter of support).

Because of small employee populations in Libby, and new preliminary data, we have revised our original application dramatically. Instead of USFS and MT Dept of Transportation workers (original

application), we are now focusing on evaluating the risk to the Libby public when disturbing amphibole-contaminated trees (Aim 1), and understanding the potential for exposure to the indoor environment when burning amphibole contaminated firewood in a woodstove (Aim 2). In Aim 3, we will be testing the toxicity of specific sizes of amphibole fibers in the lab, getting at the question of fiber sizes (short fibers vs long fibers) in causing asbestos-related diseases. Below is the Aims page for your information.

Would you (or someone from Region 8) be interested in providing us with a letter of support (as a member of USEPA Region 8 familiar with the Libby asbestos problem) for our proposal? I think it would certainly strengthen our application.

Also, it might be a good idea to fill you in on all of our recent research. It has been awhile. I'm not sure if OU3/4 are still having mine cleanup advisory committee meetings either.

Please let me know if you are interested, or have any questions.

Thanks Bonnie,

Tony Ward
The University of Montana
Center for Environmental Health Sciences
(406) 243-4092

Risk of Exposures to Libby Amphibole in Tree Bark.

Research Plan

A. Specific Aims

From about 1920 until 1990, the leading source of vermiculite ore for the US and the world was from a mine near Libby, Montana, which produced nearly 70% of the world's supply (Horton et al., 2006). In addition to the beneficial uses of the Libby vermiculite, it was also contaminated with a toxic form of naturally-occurring fibrous and asbestiform amphibole in veins throughout the deposit (Pardee and Larsen, 1929). Today, areas surrounding the abandoned vermiculite processing/mining facilities and much of the town of Libby are contaminated with these amphibole fibers, contributing to an outbreak of asbestos related diseases in the Libby population. It has recently been discovered that trees in Libby and in forested areas surrounding the abandoned mine have accumulated amphibole fibers in their bark, thereby serving as reservoirs for amphibole fibers (Ward et al., 2006a). When these contaminated trees are disturbed through firewood harvesting practices, inhalation exposures can occur (Hart et al., 2007). It has also been shown that when amphibole contaminated firewood is combusted in a woodstove, fibers are released into the ambient air. More importantly, the majority of the fibers remain in the ash post combustion, leading to continued in-home exposures (Ward et al., 2009). Taken together, these findings are significant, as woodstoves are the primary residential source of heat in Libby. In addition, much of the firewood used for home heating is harvested in currently amphibole-contaminated forested areas surrounding the abandoned vermiculite mine.

In this project, we propose to use exposure assessment and epidemiological strategies to determine the public risk of harvesting and combusting amphibole-contaminated trees. Using an aqueous elutriator that generates specific sizes of Libby amphibole fibers, we will also employ toxicological techniques that will compare the toxicity of both long (>10 μ m) and short (<5 μ m) amphibole fibers in the

respirable size fraction, including the shorter fibers commonly found in the Libby tree bark. Through three Aims, we will test the overall hypothesis that amphibole-contaminated trees in Libby are an ongoing source for occupational and public environmental exposures, with a corresponding quantifiable increase in health risks for affected populations.

Aim 1. Determine if there is an elevated health risk to the general public when disturbing amphibole-contaminated trees. Risk models will be informed through the testing of specific exposure scenarios as follows:

- a. Trials in areas of high tree bark fiber contamination result in higher inhalation exposures than such activities in areas of moderate tree bark fiber contamination.
- b. Trials under dry, warm conditions will result in higher inhalation exposures than such activities under moist, cool conditions.

Aim 2. Determine if there is an elevated health risk to the general public when burning amphibole-contaminated firewood in EPA-certified woodstoves. We will test the hypothesis that:

- a. Routine loading and stoking of the woodstove will result in an increased inhalational exposure risk.
- b. Routine removal of ash inside the home following the burning of contaminated firewood will result in an increased inhalational exposure risk.

Aim 3. Determine the toxicity of Libby amphibole fibers of specific size fractions through in vivo and in vitro studies. (to be revised).

It is anticipated that the findings from this project will prevent current and future amphibole exposures to several thousands of people that live and work in Libby, and that depend on wood for home heating. On a larger scale, the findings from our risk assessment and toxicological studies will provide information on fibers of specific dimensions (i.e. lengths and widths). This information can be used by regulators to protect the public and occupational groups from future exposures, as well as provide new information on the mechanisms of asbestos-related diseases.